# The Graduate Thesis Defence

John W. Chinneck
Systems and Computer Engineering
Carleton University

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Part One:

# PROCEDURES

# Examination board composition

- Faculty members agree to be on exam board:
  - Composition differs by program
    - e.g. OCIECE requires one examiner to be an OCIECE member at U of Ottawa
  - Potential examiners normally approached by the students supervisor
  - Examiners should be arm's-length (no conflict of interest)
- For PhD:
  - An external examiner from another institution
  - An "internal-external" from a different department at Carleton
  - Chair is assigned by FGPA. Often from completely unrelated department.

# Before the defence

- Supervisor signs off on thesis, attesting that it is ready for examination
- Thesis document must be delivered to examiners several weeks before defence
  - Carleton Master's: 3 weeks in advance
  - Carleton PhD: 6 weeks in advance
- PhD:
  - External examiner writes a report for the Dean of Graduate Studies.
  - Must agree that the defence can take place:
    - no point if the external does not think the defence can be successful

# At the defence: preliminaries

1. Examination board, student, and audience assemble in the exam room
2. Audience and student are asked to leave
   a) Chair discusses procedures with exam board members, and checks student file to make sure defence can proceed
   b) PhD: external examiner summarizes or reads their letter
   c) Agreement is obtained that defence can proceed.
3. Audience and student are recalled into the room.

# At the defence: procedures

1. Student makes short presentation (15-25 minutes)
2. First round of questions:
   a) One-on-one with each examiner in turn
   b) Order of examiners normally "outside in", i.e. external examiner first, internal-external, department members, finally supervisor
3. Second round of questions:
   a) More open-ended, examiners can follow up on each other's questions
   b) May turn into a general discussion
4. You can make a final short statement, if desired.
5. Student and audience asked to leave while the defence board discusses its decision
6. You are recalled into the room told the decision.

# How the outcome is determined

- Discussion among the examiners
- Often the result is a consensus among the examiners after the discussion
- If no consensus, then a vote takes place:
  - PhD: the external examiner has veto power: s/he must approve the thesis.

# Possible outcomes of the defence

- ***Accepted as submitted***
  - Maybe a few typos to correct.
  - Rarely awarded.
- ***Accepted after minor revisions***
  - Some rewriting is required for clarity, or to make corrections.
  - Most common outcome.
  - Revised version usually requires only the approval of the supervisor (though could require approval of some or all of the committee).
- ***Accepted after major modifications***
  - Some serious problems found
  - Usually requires some months of added work, e.g. Running extra experiments, major rewriting.
  - Will usually require another defence.
- ***Rejected***

Part Two

# BASIC PRINCIPLES

# What the graduate thesis is about

- Thesis ***must*** make an *original contribution to knowledge*
- Main elements of thesis:
  - Thesis statement or question
  - Literature review showing the thesis question has not be answered
  - Body of the thesis showing how the thesis question has been answered
  - List of original contributions to knowledge
- All are directly related to the thesis question.
- See "How to Organize your Thesis" http://www.sce.carleton.ca/faculty/chinneck/thesis.html

# What examiners are looking for

- Have you identified a worthwhile problem?
  - Not previously solved, useful to solve
  - *Problem Statement and Review of Literature*
- Have you solved the problem adequately?
  - *Body of the thesis*
- What are your original contributions to knowledge?
  - *List of contributions*

# Original contributions to knowledge

- What are these?
  - Things we ***know*** now that we did not know before you did your thesis work.
- Do not confuse with other contributions (that are not contributions to *knowledge*):
  - Organized examination of the existing literature
  - Computer programs that you wrote to demonstrate your ideas (it's the *ideas* that count)
  - Prototypes you created
  - Etc.

Part Three

# THE PRESENTATION

# Examiners are the target audience

- Address presentation to examiners
- Other audience members (friends, other students) are only observers

# 3 main things to get across

- Examiners have read the thesis document
- Presentation is a chance to ***highlight*** the most important information in the thesis
  - Can't compress everything into presentation!
  - Time only for the big picture.
- Concentrate on providing answers to the three main examiner questions:
  1. *What is the problem?* Not solved before? Useful to solve?
  2. *How did you solve the problem?* (summarize only)
  3. *What are your original contributions to knowledge?* (make this the last slide)

# Presentation content

- Problem statement (1 slide)
- *Brief* summary of literature (1 slide):
  - Focus on how problem not solved before
  - Focus on *ideas*, not listing the literature
- How you solved the problem:
  - Multiple slides
  - Concentrate on *results*
- Conclusions (1 slide)
- Summary of contributions to knowledge (1 slide)

# Extra content

- Think about the main questions you are likely to get
- Prepare extra slides that summarize your responses to these questions

# Making slides

- Use clear uncluttered layout
  - Consistent layout from slide to slide
- Use point form
  - Complete sentences too hard to absorb
- Not too much text on one slide
  - Minimum text size about 16 point
- Use graphs, charts etc. to summarize data
  - If tables, highlight important bits, e.g. best results
- Make sure there are page numbers
  - Examiners may ask to see "slide x"
- Proofread carefully!
  - Errors give a bad impression

# Preparing

- Prepare content well in advance
  - Takes time to make changes.
  - At least a week in advance
- Go over content with supervisor
  - There should be no surprises for supervisor
- 20 minutes = about 20 slides
- Practice, practice, practice.
  - Speak it out loud. Time it.
  - Don't stop to figure out a better way to say things, just continue straight through so you get an accurate time
- Practice in front of small audience, e.g. supervisor or a friend
- Go to someone else's defence

Part Four

# ON DEFENCE DAY

# Preparing

- Before defence day:
  - Make sure everything is arranged: room, projector, etc.
  - Make sure your supervisor will take notes during defence so you can concentrate on answering questions
- On defence day:
  - Dress well
  - Go to defence room early,:
    - Make sure computer/projector work correctly etc.
    - Where will you stand? Where is the audience? Will the lights be dimmed? Can you point things out on the screen? Etc.
  - Have a printed copy of your thesis with you
    - Examiners ask "on page 27, you say...."

# Making the presentation

- Speak clearly and audibly
- Be formal and professional
  - No slang, no excess jargon
- Face the audience, do not read off the slides

# Answering questions

- Listen to the whole question before responding
  - Make sure you are answering the *right* question.
- If you don't understand the question:
  - Try repeating it back to the examiner in your own words: "I think you are asking me..."
  - Still don't understand the question? Ask the reviewer to repeat
  - Still don't understand the question? *Say* that you don't understand.
    - ***Don't guess***!
- Be concise.
  - Just answer the question, nothing more.

# If you don't know the answer

- Two choices:
  - Say "*I don't know*, but I think it might be..."
  - Say "*I don't know*."
- Do not try to bluff!
  - Examiners will continue asking related questions until it's clear that you really don't know.
- It's usually not fatal.
  - Examiners try to find the limits of your knowledge.
  - Your limit may be way more than you need to pass the defence.

# Attitude

- Be respectful of examiners and other researchers:
  - Even if the question is very uninformed
  - Even if previous work was not very clever
  - This is a formal occasion. Examiners should be addressed as "professor" or "doctor".
- Do not argue! Do not get angry.
  - You can disagree, but state your reasons calmly.

Part Five

# FINISHING

# Making the changes

- Discuss changes with supervisor
- Don't rush:
  - Do complete and thorough job.
- Allow time for approval of final version and photocopying

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